2-21-97-F-313

SUMMARY
BIOLOGICAL AND CONFERENCE OPINION FOR
UNITED STATES BORDER PATROL ACTIVITIES IN THE YUMA SECTOR, WELLTON STATION, YUMA, ARIZONA

Date of opinion: September 5, 2000

Action agency: Department of Justice, Immigration and Naturalization Service, United States Border Patrol

Project: All Border Patrol activities currently being conducted by the Yuma Sector, Wellton Station, Yuma, Arizona.

Location: Yuma County

Listed species adversely affected: Endangered Sonoran pronghorn (*Antilocapra americana sonoriensis*).

Biological opinion: The proposed action is not likely to jeopardize the continued existence of the Sonoran pronghorn.

Incidental take statement:

Anticipated take: *Exceeding this level will require reinitiation of formal consultation*. The following take is expected to occur every ten years due to Border Patrol activities: 1) Take in the form of harassment that is likely to injure up to one Sonoran pronghorn.

Reasonable and prudent measures: *Implementation of these measures through the terms and conditions is mandatory.*

1) Measures shall be implemented by the Border Patrol to minimize injury of Sonoran pronghorn.

2) Measures shall be taken to monitor and study reactions of Sonoran pronghorn on BMGR to Border Patrol activities.

3) The Border Patrol as part of their action will provide a means to determine the level of incidental take that results from their activities.

Terms and conditions: *Terms and conditions implement reasonable and prudent measures and are mandatory requirements.*

To implement Reasonable and Prudent Measure number 1:

1) Reduce flights into Cabeza Prieta and administrative road usage by Border patrol vehicles.

2) Reduced speed limits on all roadways in current pronghorn habitat as identified by AGFD surveys, will be implemented as appropriate to ensure that no Sonoran pronghorn are injured due to vehicles.

To implement Reasonable and Prudent measure number 2:

1) Within six months of the date of the opinion, the USBP will begin a study to determine the effects of noise, visual impacts, and night operations from helicopter overflights on Sonoran pronghorn.

2) The USBP will within one year of the completion of the BO begin a study with AGFD to determine the effects of Border Patrol activities on pronghorn during the fawning season.

3) All above studies and monitoring efforts will be coordinated with the Service.

To implement Reasonable and Prudent measure number 3:

1) A report of the results of all monitoring and study efforts, including complete and accurate records of all incidental take that occurred during the course of the actions described herein, will be submitted to the Service on a yearly basis unless otherwise directed. This report will also describe how each of the terms and conditions of all Reasonable and Prudent measures in this incidental take statement were implemented. The USBP will attach all maps, tables, a summary of meetings and contacts with agencies, and consultants reports produced during the year to the annual report.

Conservation recommendations: *Implementation of conservation recommendations is discretionary.*

1) The Border Patrol should attend the biannual meetings of the Flat-tailed Horned Lizard Management Oversight Group.

2) The Border Patrol should assign the environmental protection specialist to coordinate the effects of their activities statewide on listed species in order to reduce these impacts where possible.

3) The USBP should continue participation in ecosystem partnerships with other federal agencies in Sonoran pronghorn habitat.

4) The Border Patrol should attempt to block, in Sonoran pronghorn habitat, illegal roads made by undocumented aliens and drug traffickers to the maximum extent possible.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021
Telephone: (602) 242-0210 FAX: (602) 242-2513

AESO/SE
2-21-97-F-313 September 5, 2000

Mr. Richard J. Diefenbeck, Director
Headquarters Facilities and Engineering Division
U.S. Department of Justice, HQENG 10/9.2.6
Immigration and Naturalization Service
425 I Street NW
Washington, DC 20536

Attn: Debra Hood, HQENG-Rm.2102

Subject: Biological Opinion on United States Border Patrol Activities in the Yuma Sector, Wellton Station, Yuma, Arizona

Dear Mr. Diefenbeck:

The U.S. Fish and Wildlife Service (Service) has reviewed the revised biological assessment and other supporting documents on the Border Patrol's activities in Yuma County, the Barry M. Goldwater Range (BMGR) and Cabeza Prieta National Wildlife Refuge (CPNWR). This document transmits the Service's biological opinion on the effects of the Border Patrol's actions on Sonoran pronghorn (*Antilocapra americana sonoriensis*) in accordance with section 7 of the Endangered Species Act of 1973, as amended, (16 U.S.C. 1531 et seq.). Your January 29, 1999, request for formal consultation was received on February 8, 1999.

This biological opinion is based on information provided in the February 1999 biological assessment (BA); telephone conversations between our staffs including Laura Thompson-Olais, Lorena Wada, Jim Rorabaugh, Ted Cordery, Tom Gatz, Debra Bills, Mike Coffeen, and Lesley Fitzpatrick; field investigations; meetings; correspondence; and other sources of information. A complete administrative record of this consultation is on file in this office. The BA addressed the following endangered, threatened, and proposed listed species: Sonoran pronghorn (*Antilocapra americana sonoriensis*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), peregrine falcon *(Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), and lesser long-nosed bat *(Leptonycteris curasoae yerbabuenae*). Border Patrol/INS determined that the proposed action is likely to adversely affect the Sonoran pronghorn and is not likely to adversely

affect the cactus ferruginous pygmy-owl, peregrine falcon, bald eagle, and lesser long-nosed bat. Your agency has also concluded that the proposed action will not affect the following species: Nichol's turk's head cactus *(Echinocactus horizonthalonius var. nicholii*), brown pelican (*Pelecanus occidentalis*), Yuma clapper rail (*Rallus longirostris yumanensis*), southwestern willow flycatcher (*Empidonax traillii extremus*), and razorback sucker (*Xyrauchen texanus*) within the area of the Border Patrol, Yuma Sector jurisdiction; therefore they will not be addressed further in this consultation. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, border patrol activities and their effects, or on other subjects considered in this opinion.

During this consultation, the mountain plover (*Charadrius montanus*) was proposed to be listed as a threatened species in the Federal Register on February 18, 1999 (USFWS 1999). On April 14, 1999, we received the Border Patrol determination letter stating that the INS/ Border Patrol activities in the Yuma Sector may affect, but are not likely to adversely affect the mountain plover.

The Service concurs with the Border Patrol's determination that the proposed action is not likely to adversely affect the cactus ferruginous pygmy-owl, bald eagle, lesser long-nosed bat, and mountain plover. All concurrences will be found in Appendix A.

CONSULTATION HISTORY

The following is a brief summary of the history leading up to the issuance of this biological opinion. A complete administrative record is available in our files.

On June 23, 1997, the Service received a letter initiating informal consultation on Border Patrol/INS aircraft and vehicle activities within the range of the Sonoran pronghorn. Also enclosed was a draft activity effect assessment document which gave preliminary information on Border Patrol activities in Yuma County, Arizona, and requested concurrence on those activities. The Service responded to the draft activity document on July 16, 1997, stating that it did not agree that the effects of the Border Patrol activities were insignificant and discountable. The Service recommended that the Border Patrol gather additional information to adequately describe all the activities they are conducting and their effects on all listed and proposed listed species in the Yuma County area.

On August 7, 1997, the Border Patrol responded to the Service's July 16, 1997 letter and requested informal consultation on their activities at Wellton Station and guidance in deciding on whether formal consultation would be required. On September 9,1997, the INS consultant, USBP agents, an INS Washington Office representative, and the Service met for the initial section 7 consultation meeting. On December 1, 1998, the INS sent a letter to the Service regarding the draft BA and requesting formal consultation for the Yuma office of the Border Patrol and the initiation of informal consultation with the Tucson office of the Border Patrol. On

January 29, 1999, the Service received the third draft of the BA for the Yuma Border Patrol activities, which included a letter from INS requesting the initiation of formal consultation. On March 22, 1999, we sent a letter to the INS initiating formal consultation on the Yuma Sector and advising you of the proposed listing of the mountain plover (*Charadrius montanus*) on February 18, 1999. A letter was received on April 14, 1999, from the INS with a determination that the proposed action was not likely to adversely affect the mountain plover. On March 9, 2000, the Service transmitted the draft biological opinion on the subject action to the INS for review and comment. On May 19, 2000, the INS transmitted comments on the draft biological opinion to the Service. A complete administrative record of this consultation is on file at this office.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The Border Patrol mission is the detection and prevention of smuggling and illegal entry into the United States. The Wellton Station patrol area is the international boundary with Mexico from Monument 197 at the Yuma/Pima County line to the west end of the Yuma County line with California and back along Interstate 8 to the Yuma/Maricopa County line junction.

The officers of the INS/Border Patrol receive their legislatively granted authority primarily through Title 8 and 18 of the United States Code (U.S.C.), and other statutes relating to the immigration and naturalization of aliens. Secondary sources of authority are administrative regulations implementing these statutes, mostly those found in Title 8 of the Code of Federal Regulations (8 CFR§ 287), judicial decisions, and administrative decisions of the Board of Immigration Appeals. Also under Titles 19 and 21 U.S.C., INS officers can be cross-deputized by U.S. Customs and the Drug Enforcement Administration.

The Border Patrol has been conducting operations to interdict undocumented aliens and contraband, and to conduct search and rescue operations in southwestern Arizona since the 1920s. Fixed-wing aircraft supplemented ground patrols in the 1940s, and drag roads (ie.-graded dirt roads over which a trailer is pulled to erase tracks) were initiated at the same time to aid in detection of border crossings. Helicopter patrols were initiated in 1983. Both drag roads and helicopter surveillance continue today to be the primary means of detecting aliens and drugs in the patrol area covered by this consultation.

The Border Patrol, Yuma Sector- Wellton Station, the subject of this consultation, is responsible for patrolling over 3000 square miles of territory corresponding with the western portions of the BMGR and Cabeza Prieta NWR between U.S. Interstate 8 and the Mexican border. Border Patrol activities within the Yuma Sector/Wellton Station include helicopter and ground patrols; drag road preparation and assessment of road maintenance; remote sensor installation and maintenance; apprehensions and rescues; and assistance to other Sectors and agencies. The

Yuma Sector rarely receives support from the Tucson Sector which operates primarily in Pima, Santa Cruz, and Cochise counties.

This consultation addresses the potential impacts of the above ongoing and future activities of the U.S. Border Patrol, Yuma Sector/Wellton Station.

Helicopter Operations

The Border Patrol maintains a fleet of three OH-6A observation helicopters with a lift capacity of four persons. Daily flights are made with these helicopters from the Marine Corps Air Station at Yuma that typically last 2.5 hours and follow a loop route directly south from the airfield; eastward along the international border; entering the Cabeza Prieta National Wildlife Refuge at the Tule Mountains; and continuing east to the Yuma County line at the end of the Sierra Pinta Mountains where they turn north until they exit the refuge. The route then proceeds west through the Mohawk Valley to the west side; then north past the Copper Mountains to Interstate 8; and lastly west along I-8 back to Yuma. Deviations from the travel route are made only to follow tracks of persons or vehicles which may have illegally entered the United States, or those of possibly stranded tourists. The helicopter flies along established dirt roads and trails at an elevation of 50-75 feet above ground level (AGL). All Border Patrol flights are restricted by the Federal Aviation Agency to operate in a restricted airspace below a 200-foot ceiling because of the Air Force and Marine Corps Military Flights being conducted in the airspace above them over the BMGR and sometimes CPNWR. A typical flight loop is approximately 220 miles with about 90 miles (40%) within Sonoran pronghorn habitat, and of that, 60 miles (25%) are within CPNWR, and the rest(130 miles), are over Interstate 8, BMGR, and developed areas.

Periodically, helicopters stationed out of Yuma must fly to the Border Patrol Station at Why, Arizona, to refuel before returning to Yuma. When flying to Why, Border Patrol helicopters fly at 100 feet to remain below the 200 foot ceiling mentioned previously. Fuel flights to Why occur approximately four to five times a month. Typically the pilots follow the El Camino Del Diablo road to Bates Well, then head northeast to Why.

Night helicopter operations are performed on an on-call basis from ground unit requests. Night missions occur only a few times per year and are usually conducted north of CPNWR. When suspect vehicles are sighted, the helicopter will wait until the vehicle approaches a major road before making contact.

Because the Border Patrol is conducting law enforcement operations it periodically has to modify its activities to match changes in entry pattern and trends. Helicopter operations also have to adjust to these changes. For example, in late 1998, three new entry locations resulted in a slight change in the flight patrol pattern to cover these areas. Similar changes will likely occur in the future.

Ground Activities

The Border Patrol has been preparing drag roads north and west of CPNWR since the 1940s. Typically a drag road is a road or well used trail, historically traveled or crossed by illegal aliens along a general route of travel from the international border northward. The surface of these dirt roads are prepared by dragging several bolted together tires across the surface at a speed of around 5 miles an hour (Figure 1). These drag roads are instrumental in helping Border Patrol agents detect sign or evidence of crossings by people or vehicles (Figure 2). The actual portions of roads subject to dragging change as entry patterns change. The Border Patrol currently works approximately 110 miles of roads. Total usable roads are 206 miles in length. No drag roads are within CPNWR. Each drag road is prepared twice a month on the average. Dragging activities occur somewhere in the Yuma Sector about every two to three days. Patrolling speeds on the drag roads average 25-30 miles an hour. A listing of the drag road locations and dimensions is as follows:

Table 1. Wellton Station Drag Road Locations and Dimensions

Name of Drag Road	Length of Road	Width of Road	Direction of Travel
Big Pass Drag	7.2 miles	15-25 feet	E-W
Border Drag	19 miles	15-25 feet	E-W
Culver Drag	6 miles	15-20 feet	E-W
Dripping Springs	2 miles	12-15 feet	E-W
High Tanks Pass	5 miles	15-25 feet	E-W
Hobbs Drag	8 miles	15-25 feet	E-W
Little Pass Drag	7 miles	15-25 feet	N-S
Lower Drag	8.5 miles	15-25 feet	E-W
Military Drag	5.6 miles	15-25 feet	E-W
Mohawk Drag	20.2 miles	20-25 feet	E-W
Vidrios Drag	8 miles	15-25 feet	E-W
Smuggler's Pass Drag	1.5 miles	15-25 feet	N-S
Tractor Drag (a)	5 miles	15-25 feet	E-W
Tractor Drag (b)	7 miles	15-25 feet	E-W
25 E*	26.5 miles	15-30 feet	N-S
40 E*	12 miles	15-30 feet	N-S

East Frontage Road*	10.5 miles	25-30 feet	N-S
Papago Road	23 miles	15-30 feet	N-S
Smuggler's Pass Road*	4 miles	15-25 feet	E-W
Tule Road*	15 miles	15 feet	N-S

*Access Roads- also used as drag roads.

The Border Patrol has implemented 24-hour patrols in the Wellton Station area since June 1988. However, the use of these patrols is dependent on staffing levels, equipment, and operational requirements.

Access roads used by the Border Patrol are maintained by heavy equipment in addition to the dragging. An INS road grader repairs and maintains the main access roads twice a year, usually during October and May each year. Approximately 92 miles of access roads are graded to enhance entry and exit of Border Patrol vehicles.

The Border Patrol also maintains a remote sensor grid at various locations in the Wellton Sector area. These 50+ sensors are serviced four times a year by Border Patrol technicians and consist of 12 inch metal cubes buried three feet in the ground. Where possible they are serviced by vehicle and, in remote areas, helicopters may be used.

Each morning, the Border Patrol pilot over-flies the standard patrol route along the international boundary looking for activity. If it is detected, the pilot informs Wellton Station, and ground units are dispatched. Off-road pursuit by vehicles only occurs when it is determined that the persons are in a particular area or have been located by the helicopter. Actions of this type are the most common type for the Wellton Station area. Ground units will check a series of drag roads in front of the direction of travel until they find tracks. The pilot is notified and moves to the new location and follows the tracks north until the persons are located or evade apprehension.

Apprehension procedures are similar in CPNWR except that usually only aircraft are used to minimize impacts from ground vehicles. The helicopter pilot will fly to the nearest Border Patrol ground unit, then fly the officer in to the last track. The officer then follows the tracks with the support of the helicopter. The helicopter can also pick up a second officer and have that person look for tracks ahead until the illegals are located.

Extreme temperatures are encountered in the Wellton Station area from May through October, and illegals contacted during this time period in the desert are usually severely dehydrated. As a result, most tracking operations during this time period are rescues. Border Patrol reports show that from 1979-1998, over 288 persons were rescued by the Border Patrol and over 60 bodies have been found. From October 1995 to December 1998, Wellton agents recorded 4559 illegal entrants, 2633 apprehensions, 137 rescues, and 2 fatalities.

Limited night activities are conducted by the Wellton Station helicopters. Night operations are flown in support of ground units that have encountered illegal entries at the border. The ground units move to the next drag road north and try to determine the route of the illegals. Off-road pursuit can occur at this time with supporting ground vehicles or helicopters depending on the situation.

Most of the Wellton Station activities occur within their normal patrol area. Once or twice a year they are asked to assist Tucson Sector on an as-needed basis. In addition to refueling at the Ajo Station, the Wellton helicopters are asked to assist in search and rescue in the area. Also they look for undocumented aliens on the El Camino Del Diablo and Charlie Bell roads.

The Border Patrol supplies considerable assistance to AGFD, BLM, and CPNWR to facilitate their resource protection missions. The USBP supplies helicopter support to the refuge on an as-needed basis for repair of refuge communication/repeater system and wildlife water development inventories. The Border Patrol also assists the refuge in the retrieval of radio-collars from Sonoran pronghorn mortalities, search and rescue operations with lost recreationists, and illegal off-road vehicle activity reporting.

Conservation Measures

The use of helicopters by the Border Patrol is essential to patrol the vast desert areas in the Wellton Station patrol area. To reduce the potential impacts to Sonoran pronghorns and other noise sensitive species, the Border Patrol is proposing to replace the existing OH-6A helicopters with the new 50% quieter MD600N. This replacement is scheduled to start in FY 2002.

While the Border Patrol cannot eliminate low level helicopter flights and still conduct its mission, it can modify the routes to reduce the impacts to listed species as much as possible. On September 9, 1997, the Border Patrol met with the Service and AGFD and agreed to shift a patrol corridor west and south to avoid completely the Mohawk dunes and the central Mohawk Valley which are pronghorn fawning areas. Similar flight route modifications will be conducted as necessary in the future.

In order to reduce the potential impacts to pronghorns during the peak three months of the fawning season, April-June, the Border Patrol flights will modify their daily patrol flight as follows: instead of flying over Pinta Sands and around the south end of the Sierra Pinta Mountains, flights will turn north at Tule Springs and fly up through the Tule Desert to the north end of the Sierra Pintas and rejoin the normal flight route there. This route change will be done during the peak fawning time whenever tracking information from the drag roads and remote sensors indicates that illegal activities are minimal on the east end of the patrol route in the south San Cristobal Valley and Mohawk Valley areas.

The Border Patrol will make weekly contacts with the AGFD in Yuma or CPNWR for an update on the weekend telemetry flights so that areas of pronghorn concentrations can be avoided by ground and air units where possible.

In order to continue improving interagency communication, the Border Patrol, Wellton Station, will make confidential monthly reports to the manager of CPNWR detailing the law enforcement actions in the last month and wildlife observations made under the guidelines from the refuge. Every attempt will be made to avoid contact with Sonoran pronghorns by Border Patrol helicopters and ground units.

In order to formalize the relationship between the Border Patrol and CPNWR, the draft Memorandum of Understanding between the two agencies will be finalized in year 2000. The MOU will address objectives that will minimize potential conflicts between the parties including the limiting of routine patrols and off-road use in wilderness, and provide a framework for cooperation. As part of this agreement, the Border Patrol will agree to furnish CPNWR, when available, aircraft support for game inventory, water hole and remote sensing maintenance, patrol for stranded motorists, and search and rescue.

In order to improve communication between the agencies, the Border Patrol and the Service will conduct an annual meeting during which the Border Patrol will present an annual report to the Service summarizing their activities and observations on the range and discuss ways of improving communication and minimizing impacts to listed and proposed species, and species protected by conservation agreements.

Summary of Conservation Measures

As part of the Proposed Action the Border Patrol has agreed to implement the following actions:

1) Purchase new, quieter MD600N helicopters to replace existing OH-06As.

2) Coordinate with AGFD weekly to obtain current pronghorn locations to avoid concentration and fawning areas.

3) Modify helicopter routes from April through June to avoid fawning areas.

4) Continue to make monthly reports of activities and wildlife observations to the CPNWR manager.

5) Finalize Border Patrol and CPNWR MOU.

6) Conduct an annual interagency meeting with CPNWR, FWS, and Bureau of Land Management (BLM) to present the annual report and discuss ways to improve coordination.

STATUS OF THE SPECIES

-Sonoran Pronghorn (*Antilocapra americana sonoriensis*)

The Sonoran pronghorn was listed throughout its range as endangered on March 11, 1967 (32 FR 4001), and is currently recognized as one of five subspecies of pronghorn (Nowak and Paradiso 1983). The subspecies presently inhabits southwestern Arizona in the U.S. and northwestern Sonora in Mexico. Critical habitat has not been designated for Sonoran pronghorn.

A. Distribution and Abundance

-Arizona and California:

Prior to 1945 when the species was described (Goldman 1945), many of the collected specimens had been listed as different subspecies (AGFD 1981). Historically they ranged from Arizona's Highway 15 to the east; the Altar Valley and the Tohono O'odham Nation (formerly known as the Papago) to the north; and Imperial Valley, California, to the west (Wright and deVos 1986; and Nelson 1925, Monson 1968, Paradiso and Nowak 1971). Antelope were found in every open valley along the international boundary from Nogales to Yuma (Carr 1971), but by 1907 pronghorn were described by E.A. Mearns as a rare animal in the region (CPNWR 1980). Nelson (1925) stated that in 1923, local people reported that a few antelope were still ranging in the Santa Rosa Valley in Pima County, Arizona. No definite number was given, but Nelson did estimate that there were 105 Sonoran pronghorn in Arizona in 1924. Nichol (1941) estimated 60 antelope in southwestern Arizona in 1941, not including those found on Organ Pipe Cactus National Monument. Halloran (1957) said there were probably less than 1,000 Sonoran pronghorn in 1956. Carr (1970) observed the "sighting of eight antelope near Pisinimo on the Papago Indian Reservation which most likely drifted north from Mexico," and that "there have been numerous rumors of antelope in the Papago country"; however, no recent reliable observations have been made. Carr (1970) also stated that there "is a considerable amount of good Sonoran antelope habitat on the Papago Indian Reservation and particularly in the Great Plains area. However, indian hunting and grazing practices prohibit a lasting resident antelope population."

Literature and recent telemetry show that Sonoran pronghorn occur most frequently in the following Arizona areas (Carr 1972; Hall 1981): Pinta Sands, Growler Valley, Mohawk Valley, and San Cristobal Valley. Wright and deVos (1986) stated that observations in the Growler Valley were frequent and that the Mohawk Valley, San Cristobal Valley, and Goldwater AFR support herds of 10 to 20 animals during most of the year. Also mentioned was a regularly observed herd of 7 to 10 pronghorn in the Cameron tanks area. The results of telemetry studies in 1983-1991 indicate that Sonoran pronghorns nonrandomly use their habitats (deVos 1998). On Organ Pipe Cactus NM, Sonoran pronghorn are frequently observed during spring and

summer west of Highway 85. Sonoran pronghorn have not been confirmed east of Highway 85 in Organ Pipe Cactus National Monument since 1972.

A summary of population estimates from literature and field surveys for Sonoran pronghorn in the U.S. are as follows:

1925	-	Nelson estimated 105 in Arizona (Nelson 1925)
1941	-	Nichol estimated 60 in southwestern Arizona, excluding Organ Pipe Cactus NM (Nichol 1941)
1957	-	Halloran - less than 1000 (Halloran 1957)
1968	-	Monson - 50 in Arizona (Monson 1968)
1968 to 1974	-	Carr's ground observations; he estimated 50-150 (Carr 1974)
1981	-	Estimate of 100-150 Sonoran pronghorn in Arizona (AGFD 1981)
1992	-	Line transect aerial survey estimate of 246 for the U.S. (121 observed; Snow 1994)
1994	-	Line transect aerial survey estimate of 184 for the U.S. (109 observed; Snow 1994)
1996	-	Line transect aerial survey estimate of 216 for the U.S. (82 observed; Hervert et al. 1997a)
1996	-	Using a different method of mark-recapture on the same 1996 survey, estimate of 164 (Hervert et al. 1997a)

Observations of pronghorn were supposedly not uncommon along and east of Highway 85 many years ago. A lack of recent observations east of the highway, however, indicates that this heavily used road currently poses a barrier to eastward movement. On June 12, 1996, however, an adult doe Sonoran pronghorn was observed crossing Highway 85 (east to west) on the north end of the Crater Range (R. Barry, pers. comm., Luke AFB). There also exists an unconfirmed report of four Sonoran pronghorn attempting to cross Highway 85 in August 1993 about 1.5 km north of the Organ Pipe Cactus NM visitor center. A juvenile crossed the highway (two lanes) to the east, but with the approach of a vehicle, ran back across the road to join the three pronghorn there (T. Ramon, pers. comm., Luke AFB).

The 1992 U.S. range-wide aerial survey observed 121 pronghorn in 30 to 38 groups in Arizona; after statistically analyzing the data, the population was estimated at 246 animals. Not included in the 1992 aerial surveys were two locations north of Black Gap at the north end of the Sauceda Mountains on the Goldwater AFR, immediately west of Highway 85, and the entire Lechuguilla Desert to the west and northwest side of Cabeza Prieta NWR. The March 1994 U.S. aerial survey observed 109 pronghorn with 16 groups observed; the population estimate was 184 (Snow 1994). Up to this time, only the line transect method was used for aerial surveys of pronghorns (Johnson et al. 1991). The December 1996 U.S. aerial survey observed 71 pronghorn in 12

groups; the population estimate was 216. A mark-recapture methodology, using collared pronghorn, was also used in the December 1996 survey. The sighting rate of these marked pronghorn provided an independent population estimate of 164 animals (Hervert et al. 1997a). This survey was redone in December1998 producing a population estimate of 142 animals (Bright et.al. 1999).

Johnson et al. (1991) and Hervert et al. (1997a) felt that pronghorn observed on transects provide a more statistically valid estimate for evaluation of population trends. The number of pronghorn observed on transects declined from 99 and 100 on the previous two surveys to 71 on the 1996 survey. High fawn mortality in 1995 and 1996 and a loss of 8 of 16 radio-collared adult pronghorn during the previous 13 months indicate that the decline was real. During a three year period, five consecutive six-month seasons of below normal precipitation (summer 1994 through summer 1996) throughout most of the Sonoran pronghorn range, were likely responsible (Hervert et al. 1997b).

-Mexico

Historically, Sonoran pronghorn ranged from Hermosillo south to Kino Bay. Nelson (1925) reported that a few herds in northwestern Sonora, Mexico, moved back and forth across the Arizona border. On January 4, 1925, Ben Tinker, representing the Permanent Wild Life Protection Fund along the Sonora-Arizona border, reported that he had counted 595 pronghorn in Sonora in November 1924 (Carr 1974). The herds ranged from the southern end of the Sierra Rosario, south and east to the Sierra Blanca and the Rio Sonoyta, to the eastern side of the Sierra de San Francisco. Villa (1958) estimated there were over 100 antelope in northwestern Sonora in 1957.

On the basis of sightings and confiscated specimens, Monson (1968) stated that the Sonoran pronghorn persisted in some localities along the east side of the Pinacate Lava Flow in Mexico southward to about 300 km south of Puerto Libertad in Mexico.

In Mexico, Sonoran pronghorn have been sighted just to the east of Sonoyta, directly south of Lukeville on the border; northeast, east, and southeast of Puerto Peñasco; and on all sides of the Sierra Pinacate. A number of Sonoran pronghorn were sighted east of Puerto Peñasco during the March 1993 aerial survey. Surveys to be conducted in Mexico should include regions with suitable habitat from Kino Bay, north through the historic range, to the southern extent of the recent aerial surveys. This would provide coverage of all areas with historic records for this subspecies (J. deVos, AGFD, pers. commun.). In Mexico, Sonoran pronghorn range near the Pinacate Lava flow, in the open valley between the lava flow and Caborca, and south to possibly near Kino Bay.

Population estimates from literature and field surveys for Sonoran pronghorn in Mexico are:

1925 - Nelson reported 595 in Sonora (Nelson 1925)
1957 - More than 1,000 in northwestern Sonora (Villa 1958)
1981 - Estimates in Mexico 200-350 (AGFD 1981)
1993 - Line transect survey estimate for Mexico of 313 (242 observed; Snow 1994)

In Mexico just south of the U.S. border, 242 animals were observed using the line transect method in a March 1993 aerial survey, giving a population estimate of 313 (Snow 1994). However, because no surveys have been conducted in Mexico since 1993 and the original survey was not exhaustive, no statistically valid estimate on the Sonoran pronghorn population in Mexico is currently available.

It has been six years since the last aerial survey was done in Mexico. A lack of funding, monitoring, and research on this portion of the population limits current management efforts. So statistically valid estimates on the Sonoran pronghorn population in Mexico are not available.

The estimate of the entire Sonoran pronghorn population, in the U.S.(142) and Mexico (266) is approximately 408 pronghorns.

C. Current Limits to Distribution

Highways, fences, railroads, and irrigation canals are physical deterrents to future expanding pronghorn populations. Highway 2 in Mexico runs parallel to the south boundary of Cabeza Prieta NWR in the vicinity of refuge pronghorn habitat at Pinta Sands. This highway receives a considerable amount of fast-moving vehicular traffic. In 1999, Dr. Rodrigo Medellin of Instituto de Ecologia, reported that Sonora, Mexico is planning to widen and improve Highway 2 to four lanes. Both Cabeza Prieta NWR and Organ Pipe NM have boundary fences along the border. The refuge south-boundary seven-strand livestock fence continues to be a substantial barrier.

Modifying the fences along the U.S./Mexico border to allow pronghorn passage could aid in maintaining genetic diversity if sufficient pronghorn movement did occur, but it might also lead to increased pronghorn fatalities from motorized traffic on Highway 2. Mexico has been involved in discussions regarding the fences because any fence modifications could affect pronghorn populations in both countries.

Highway 85 between Gila Bend and Lukeville, Arizona, also appears to be a barrier to Sonoran pronghorn movement eastward. Traffic volume and average speeds have increased substantially over the last 30 years as international trade and tourism have increased. This highway corridor is unfenced in Organ Pipe Cactus National Monument to allow free movement of pronghorns but

has livestock fencing on both sides for most of the remaining mileage on BLM and private lands between Interstate 8 and Organ Pipe Cactus National Monument. Interstate 8 and adjacent agriculture areas act as barriers for northward movement of Sonoran pronghorn. BLM grazing allotment interior fences also offer significant barriers to eastward movement of pronghorns from Cabeza Prieta NWR.

D. Habitat

Brown (1982) discussed seven subdivisions of the Sonoran Desert, two of which encompass the habitat of Sonoran pronghorn. These are the Lower Colorado River Valley and the Arizona Upland. Creosote (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) make up a major portion of the Lower Colorado River Valley subdivision. Species along major water courses include ironwood (*Olneya tesota*), blue palo verde (*Cercidium floridum*), and mesquite (*Prosopis* spp.). In associated microphyll woodlands, species in the Arizona Upland include foothill palo verde (*Cercidium microphyllum*), catclaw acacia (*Acacia greggii*), along with jumping cholla (*Opuntia fulgida*), teddy bear cholla (*O. bigelovii*), buckhorn cholla (*O. acanthocarpa*), and Staghorn cholla (*O. versicolor*).

Data collected from radio-collared animals and fecal pellet analysis have provided some data on habitat used by Sonoran pronghorn. Although most of the habitat is within federally protected lands, various uses of these lands may affect their suitability as habitat for Sonoran pronghorn.

-Topography

The habitat of the Sonoran pronghorn in the U.S. consists of broad alluvial valleys separated by block-faulted mountain and surface volcanics. Elevations in these valleys vary from 122 m near the Mohawk Valley in the west to 488 m in the Valley of the Ajo to the east. Major drainages run north and south. The mountains are of two major types: a sierra type, composed of metamorphic and granitic rock; and a mesa type, typically of basaltic composition. Only the Ajo Mountains exceed 1,219 m in elevation. The mountain ranges run northwest to southeast with valleys draining to the north towards the Gila River and to the south towards Rio Sonoyta in Mexico. These valleys are fairly level and are dominated by creosote and white bursage. In December 1984, 40 percent of the pronghorn observed during a telemetry flight were in the Growler Valley, from the Aguila Mountains to the International Border. AGFD (1985) reported that pronghorn used flat valleys and isolated hills to a greater degree than other topographic features.

Washes flow briefly after rains during the monsoon season and after sustained winter rains. The network created by these washes provides important thermal cover for Sonoran pronghorn during the hot summer season. Drainages and bajadas are used during spring and summer. Bajadas are used in spring as fawning areas. Pronghorn were observed using palo verde, ironwood, and mesquite in the microphyll woodlands for cover during weekly AGFD telemetry flights, which started in 1994 and have continued through 1999.

Pronghorn were observed in playas in April and May of 1988 and 1989 when forbs were abundant, later vacating these areas when desiccation of forbes occurred (Hughes and Smith 1990). In good rain years, some playas produce abundant forbs as a result of water collection through its inability to percolate through the hardpan.

Some of the sandy areas within Sonoran pronghorn habitat such as Pinta Sands, the Mohawk Dunes west of the Mohawk Mountains, and the west side of the Aguila Mountains, provide a greater variety of seasonal vegetation when precipitation events occur. The openness of these areas appears to be attractive for pronghorn as the annuals, grasses, and shrubs provide good forage, particularly in the spring. These areas have long been considered significant Sonoran pronghorn habitat in the U.S. Carr (1974) reported seeing Sonoran pronghorn frequently in the Pinta Sands area. These dunes are important in the spring when annuals are present. Due to the more arid nature of valley and dune habitats, annuals dry and cure with decreased palatability as summer approaches. Also, these habitats lack sufficient woody vegetation to satisfy pronghorn requirements for nutrition and thermal protection. These factors limit the temporal suitability of these areas and most pronghorn have moved to bajada habitat in the southeast portion of the range by early summer.

E. Life History

-Movement

Hot and dry seasonal movements of pronghorn from the lower elevations north in the winter to the high elevations south in the summer are reported by Wright and deVos (1986). Movements correlate with high temperatures and are most likely motivated by the need for moisture available in succulent cactus such as chain fruit cholla (Hervert et al. 1997b). Sonoran pronghorn tend to occupy valley floors and bajadas in their western U.S. range in winter, but tend to move south and east and up slope so that some individuals are found in foothill locations by midsummer.

-Disturbance Factors

Studies of captive pronghorn other than Sonoran, have shown that they are sensitive to disturbance such as human presence and vehicular noise. Human traffic, like a person walking past pronghorn in an enclosed pen, running past, a motorcycle driving past, a truck driving past, a truck blowing its horn and driving past, or a person entering a holding pen, cause an increased heart rate response in pronghorn. In a study in Ogden, Utah, these various types of disturbance were correlated with changes in heart rate on American pronghorn, which were in half-acre holding pens (Workman et al. 1992). Additionally, the highest heart rate responses occurred with female pronghorn when a person entered a holding pen, or a truck was driven past their pen while sounding the horn. The lowest response occurred when a motorcycle or truck was driven past their pen. Other investigators have shown that heart rate increases in response to auditory or

visual disturbance in the absence of overt behavioral changes (Thompson et al. 1968, Cherkovich and Tatoyan 1973, Moen et al. 1978).

Sonoran pronghorns are built for running. A pronghorn on good range can canter effortlessly at 40 kph, gallop without straining at 70 kph, and run flat out at speeds of 90-100 kph(Byers 1997). During an aerial reconnaissance, one herd of Sonoran pronghorn was observed 1½ hours later and 18 km away from the initial observation location (Wright and deVos 1986). Hughes and Smith (1990) found that pronghorn ran immediately from a vehicle to about 400 to 500 m distant and that military low-level flights (<500 feet) over three pronghorn caused them to move about 100 m from their original location. During times of good forage, disturbances like these would have little effect. During drought times, disturbances that cause pronghorns to startle and run distances would have a more significant energy effect.

ENVIRONMENTAL BASELINE

- Sonoran Pronghorn

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation. The environmental baseline is a snapshot of the species health at a specific point in time. It does not include the effects of the action under review in the consultation.

a. Status of the species within the action area-U.S. and Mexico

Pronghorn habitat has been recently affected by several years of Sonoran Desert drought and one El Niño year with above normal moisture. Normal annual precipitation in this area averages 127 mm in a bimodal pattern occurring from December to February and during summer monsoons, which occur any time from July until September. Summer rains occur typically as thunderstorms and are spotty in their distribution and precipitation.

As late as 1994, the estimated population of Sonoran pronghorn using distance sampling methods was more than 200 individuals. The results of an aerial survey, conducted in December 1996, suggest that the most reliable estimate (based on capture-recapture estimates using collared individuals) of the current population is 130-160 individuals (J. Hervert, pers. comm. 1997). The decrease in the population may be attributable to periods of drought in 1994 (November), 1995 (summer), and 1996 (winter). Because available food was not as abundant during this period, pronghorn may have been forced to use habitat where they are more vulnerable to predation. Lack of water may also be a factor affecting the condition of the pronghorns.

In 1995, there was abundant rainfall in the spring. Productivity of Sonoran pronghorn was between 1 and 1.4 fawns per doe. In July, the ratio of fawns to does was as high as 50/100. However, as drought conditions set in from July to December most fawns died. Recruitment for the year was 12 fawns per 100 does.

Drought conditions continued in 1996. Productivity was only 33 fawns per 100 does. The fawns that were produced died very quickly. The AGFD could not detect a single fawn surviving in the range of the Sonoran pronghorn in the United States in 1996; recruitment was zero. At a recent population viability analysis workshop conducted for the Sonoran pronghorn, recruitment at a level of 35 fawns per 100 does was deemed to be necessary for the subspecies to persist (Hervert 1996).

Adult mortality has been very high in the winter drought periods. Overall, of the 22 Sonoran pronghorn that were collared in the last few years, predation may account for 10 and possibly more of the known mortalities, which were labeled as "cause unknown" due to insufficient evidence. No collared pronghorn mortalities were documented during the height of the drought season. Capture myopathy may have played a role in up to four of the mortalities (J.Hervert 1997b). Where possible (the majority of documented mortalities) bone marrow condition was assessed. Only one specimen was determined to be in poor to fair condition while all others were determined to be in good condition. No evidence of predation of pronghorn has been documented near water sources (J. Hervert, AGFD, pers.comm. 1997).

b. Factors affecting species' environment within the action area

Factors affecting pronghorn within the action area in the U.S. include military activities, historic livestock grazing, agricultural development, and recreation. Most livestock grazing has been eliminated from the current habitat with the exception of a few BLM allotments around Ajo. However, 150 years of grazing has substantially altered the vegetation in the range of the Sonoran pronghorn and it will take many decades for this area to recover measurably from this impact. Pronghorn range continues to be limited by state and interstate highway corridors even with wildlife proof fencing, although this also limits highway mortalities. The international border with Mexico also has a substantial fence barrier which effectively prevents movement between the two populations, but it also prevents animal mortality from Mexico Highway #2. Recreation activities are highly controlled in current pronghorn habitat. Both Cabeza Prieta National Wildlife Refuge and Organ Pipe National Monument are wilderness areas with very limited roads. The BMGR has access by "permit only" areas or is closed due to the use of explosive ordnance. Military activities continue to be one of the main impacts and uses in Sonoran pronghorn habitat.

From 1986 to the present there have been 12 formal consultations which include the Sonoran pronghorn habitat, and 10 Biological Opinions which include pronghorns in their associated take statements as follows:

1) Mohawk Valley Water Tank Installation-Cons#2-21-86-F-81. This was an intra-Service consultation with CPNWR to install a guzzler for pronghorns. No take statement was included for the tank. If any take was observed as a result of the installation of the tank, it would be removed.

2) The project was a study to capture, collar, and monitor Sonoran pronghorn on CPNWR with several cooperating agencies-Cons#2-21-88-F-6. No take was authorized for this project. If any incidents occurred the study would be terminated and consultation re-initiated.

3) F-15E Beddown Project at Luke Air Force Base affecting the Goldwater Range-Cons#2-21-89-F-008. This Air Force consultation involved an aircraft replacement with a corresponding increase in night and low level operations. The take statement allowed an unquantified number of Sonoran pronghorn to be harassed.

4) Lower Gila South Resource Management Plan-Goldwater Amendment-Cons#2-21-90-F-042. This BLM planning document gave specific and general management guidance for non-military activities on the BMGR. It included directives to integrate military and non-military activities, utility corridor placement, water development, baseline soils, plants, and cultural surveys. Also three Areas of Critical Environmental Concern (ACECs), a Special Recreation Management Area, a Habitat Management Area, and a Backcountry Byway were considered. The opinion requires the BLM to consult when site-specific plans are prepared. No incidental take statement was issued because there were no specific projects listed that might result in take.

5) Lower Gila South Habitat Management Plan-Cons#2-21-89-F-213. This Phoenix BLM planning document gave management guidance for both specific and general actions in southwest Arizona. Four actions are addressed in the HMP including the exchange of 640 acres by Ajo, rehabilitation work on 2 catchments, and assessment of livestock removal from pronghorn habitat. This document advises the BLM to consult once site specific project documents are prepared. No incidental take statement was included because no specific projects were in the proposed action.

6) This project included existing and proposed activities by the MCAS- Yuma in the Arizona portion of the Yuma Training Range Complex-Cons#2-21-95-F-114. The activity uses included changes to military flights over CPNWR, ongoing flights over the BMGR, and operation of various training facilities. The anticipated take was one pronghorn in 10 years due to direct mortality and an undetermined number in the form of harassment.

7) The consultation covered the use of ground-surface and airspace for Air Force military training on the Barry M. Goldwater Range which may affect the Sonoran pronghorn-Cons#2-21-96-F-094. This project was initially covered by a five month interim Biological Opinion which expired when the final was signed. The take statement anticipated take in the form of harassment of two Sonoran pronghorn every ten years and take in the form of death of one pronghorn every ten years.

8) This project concerned the General Management Plan for Organ Pipe Cactus National Monument-Cons#2-21-89-F-078. The purpose of the document was to guide the future management of the Monument for the next 10-15 years including eight specific actions including the modification of the fences along the border of the monument to pronghorn standards. The take statement anticipated the take of one Sonoran pronghorn either by injury or death on SR-85.

9) Lower Gila Resource Area Amendment, BLM-Cons#2-21-95-F-269. This amendment addressed southwestern willow flycatcher in the plan area. The take statement was concerned only with flycatchers. However the management area boundary includes the north and south tactical ranges (TACs) which often have pronghorn, and addresses the closure of the area to recreation by permit access only.

10) This consultation with the BLM covered cattle grazing in Sonoran pronghorn habitat, specifically five allotments in the vicinity of Ajo, AZ-Cons#2-21-94-F-192. The consultation was requested because the BLM was proposing to change the use/preference (base allotment of AUMs) for the five Ajo grazing allotments. The consultation required that the BLM have a biological monitor at all maintenance activities, that the range condition be monitored within a five year period since it was last done in 1980-1981, and to do a yearly report of all monitoring and incidents. The anticipated take that was expected to occur every 15 years was one Sonoran pronghorn due to harassment and one in the form of death.

11) Yuma District Resource Management Plan and Amendments-Cons#2-21-97-F-082. This document covers seven Yuma District BLM planning documents and eight listed species. The Service concurred with the BLM that the proposed action was not likely to adversely affect 4 species, including the Sonoran pronghorn. Livestock grazing and ORV activities do not occur in pronghorn habitat in the plan area therefore impacts are not expected.

12) Lower Gila South Resource Management Plan and Amendment-Cons#2-21-85-F-069. This document covers four BLM state office planning documents for four listed species including the Sonoran pronghorn. The Service concurred that two species were not likely to be adversely affected and consulted formally on the other two, which included the Sonoran pronghorn. The anticipated take was defined in terms of degradation of habitat by fences and loss of food plants to livestock. Any decline in forage quality or increase in fencing would exceed the level of incidental take.

In summary, from the anticipated take in the ten biological opinions, the Service authorized the potential death of four pronghorns and the harassment of pronghorn in five projects if agencies complied with reasonable and prudent measures and implementing terms and conditions. To date, no action agency has documented take due to either harassment or direct mortality.

EFFECTS OF THE ACTION

Currently, no studies have been conducted in Yuma County to determine the effects of any border patrol activities on Sonoran pronghorn. There are no documented Sonoran pronghorn mortalities that have been directly linked to border patrol activity, though the causes of several mortalities have been undeterminable. The following is a discussion of the most probable types of effects that Sonoran pronghorn may experience on the BMGR and Cabeza Prieta NWR in Yuma County.

Direct injury to pronghorns could occur as a result of border patrol vehicle collision or by low level helicopter flights abruptly approaching and startling pronghorn so that they startle into

escape behavior that results in injury or abandonment of fawns. Luke Air Force Base flight operations occur down to 500 feet. Border Patrol helicopters must operate below this level at 200 feet or less, which increases the chance of any encountered pronghorn being startled.

Border Patrol operations in the Lechuguilla Desert and further west in Yuma County are outside the known, current range of Sonoran pronghorn based on telemetry data collected between November 1994 and September 1998. Based on these data, few pronghorn have occurred west of the Copper Mountain and Cabeza Prieta Mountains. Therefore, pronghorn appear to be most at risk of death or injury from Border Patrol activities east of the Cabeza Prieta and Copper Mountain ranges.

Sonoran pronghorn may also be affected by noise and visual impacts of aircraft overflights. Pronghorn have been exposed to aircraft overflights on BMGR since 1941. No detailed studies of the effects of aircraft overflights on Sonoran pronghorn have been completed, though apparent responses to aircraft overflights by Sonoran pronghorn have been observed by Hughes and Smith (1990), who noted that several pronghorns overflown by low flying military aircraft moved less than 100 yards from their previously noted positions. In comparison, American pronghorns have reacted to helicopter overflights with either no reaction at 1000 meter approach to running at 150 meters approach. The report suggested that behavioral changes in wild animals such as running or avoidance behavior, caused by loud or sudden noises, can increase energy expenditures that could lead to lower rates of reproduction and survival. deVos (1989) concluded that military activity sites on the BMGR did not negatively affect Sonoran pronghorn movements and in fact Sonoran pronghorn use was higher than expected around military use sites; however he recommended that further studies be conducted on the effects of military activities, including overflights, on pronghorns. Hughes and Smith (1990) had numerous observations of pronghorns reacting to vehicles and foot traffic where the pronghorns became aware and alerted to movements. They concluded that such vehicle and people disturbances occur often especially in the hottest, driest times of the year, and pronghorns could be detrimentally affected by the increased energy expenditure and water loss from this movement.

Additional studies by Workman et. al. (1992) showed American pronghorn antelope reactions to human and aircraft overflights by jets at sub-sonic and super-sonic levels, Cessna 182, and Huey helicopter overflights. Antelope appeared to partially habituate to the sound levels in the military jet and small propeller airplane overflights. However, they showed the greatest heart rate change and excitable behavior to helicopter overflights and hoverings with no apparent habituation. The antelope even began to anticipate the helicopter overflights by showing alert behavior and gradually elevating heart rates as the helicopters could be heard. Changes in heart rate and body temperature were also noted when persons walked past the antelope, drove past, or when a person entered the enclosure.

Various noise impact studies have been conducted on other species, but there is no consensus as to their applicability to Sonoran pronghorn. A recent study by Workman et. al.(1992) observed

similar flight reactions and elevated pulses and temperatures in elk and bighorn sheep in their study. The strongest reactions were with the Huey helicopter flyovers and hoverings. Both the elk and sheep in this study habituated to the military jet and small propeller aircraft after several trials but not to the helicopters.

The effects of the Border Patrol activities may be similar on Sonoran pronghorns to those mentioned above. In order to reduce these effects the Border Patrol is proposing to replace their current helicopters with 50% quieter ones. To further reduce their low level flight impacts the Border Patrol has modified their standard patrol routes in the past in coordination with AGFD and Cabeza Prieta NWR. Similar flight route modifications will be made in the future as they are indicated.

In order to reduce the potential impacts to pronghorns during the peak three months of the fawning season, April-June, the Border Patrol flights will modify their daily patrol flight over Pinta Sands and around the south end of the Sierra Pinta Mountains to fly up through the Tule Desert to the north end of the Sierra Pintas and rejoin the normal flight route there. This route change will be done during the peak fawning time whenever tracking information from the drag roads and remote sensors indicates that illegal activities do not require this patrol effort on the east end of the patrol route in the south San Cristobal Valley and Mohawk Valley areas.

The Border Patrol will make weekly contacts with the AGFD in Yuma or CPNWR for an update on the weekend telemetry flights so that areas of pronghorn concentrations can be avoided by ground and air units where possible.

In order to continue improving interagency communication, the Border Patrol, Wellton Station, will make confidential monthly reports to the manager of CPNWR detailing the law enforcement actions in the last month and wildlife observations made under the guidelines from the refuge. Every attempt will be made to avoid contact with Sonoran pronghorns by Border Patrol helicopters and ground units.

In order to formalize the relationship between the Border Patrol and CPNWR, the draft Memorandum of Understanding between the two agencies will be finalized in 2000. The MOU will address objectives that will minimize potential conflicts between the parties including the limiting of routine patrols and off-road use in wilderness, and provide a framework for cooperation. As part of this agreement, the Border Patrol will agree to furnish CPNWR, when available, aircraft support for game inventory, water hole and remote sensing maintenance, patrol for stranded motorists, and search and rescue.

In addition to the above activities, in order to improve communication between the agencies, the Border Patrol and the Service will conduct an annual meeting during which the Border Patrol will present an annual report to the Service summarizing their activities and observations on the

range and discuss ways of improving communication and minimizing impacts to listed and proposed species, and species protected by conservation agreements.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The AGFD is anticipated to continue aerial surveys of the Sonoran pronghorn population, telemetry flights to track collared pronghorn, and attempts to radio-collar additional pronghorn. The latter action has had some adverse effect on Sonoran pronghorn. Since the project area occurs on the lands under Federal jurisdiction, it is not likely that other actions that might affect listed species would not be a Federal action subject to additional Section 7 consultation.

CONCLUSION

After reviewing the current status of Sonoran pronghorn, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the Sonoran pronghorn. No critical habitat has been designated for this species, therefore, none will be affected.

Our rationale is as follows:

1) Sonoran pronghorn have persisted in Yuma County over a period of 70 years while being subjected to the same types of activities on which the Border Patrol is consulting.

2) Sonoran pronghorn are expected to continue to remain in areas where Border Patrol activities occur and no additional habitat is expected to be lost to their use or degraded further because of activities anticipated in this consultation.

3) There are no documented Sonoran pronghorn mortalities that have been directly linked to Border Patrol activities.

4) Sonoran pronghorn are expected to continue to conduct all known behaviors including reproduction, feeding, resting, and rutting within areas where border patrol activities occur.

5) The Border Patrol is planning to purchase new, quieter, MD600N helicopters to replace existing OH-06As.

6) Coordination between AGFD and Border Patrol is planned to occur weekly to obtain current pronghorn locations to avoid concentration and fawning areas.

7) The Border Patrol will modify helicopter routes from April through June to avoid fawning areas identified by AGFD telemetry flights.

8) Border Patrol and CPNWR will finalize their memorandum of understanding which will formalize their contacts and cooperative efforts.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Border Patrol so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Border Patrol has a continuing duty to regulate the activity covered by this incidental take statement. If the Border patrol (1) fails to assume and implement the terms and conditions or (2) fails to require the (applicant) to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Border Patrol must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)]

AMOUNT OR EXTENT OF TAKE

We anticipate take in the form of harassment that is likely to injure up to one Sonoran pronghorn in ten years.

This biological opinion does not authorize any form of take not incidental to the actions described herein. If the incidental take authorized by this opinion is met, the Border patrol shall immediately notify the Service in writing. If, during the course of the action, the amount or extent of the incidental take anticipated is exceeded, the Border patrol must reinitiate consultation with the Service immediately to avoid violation of section 9. Operations must be stopped in the interim period between the initiation and completion of the new consultation if it is determined that the impact of the additional taking will cause an irreversible and adverse impact on the species, as required by 50 CFR§402.14(i). An explanation of the causes of the taking should be provided to the Service.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species. There is no critical habitat designated for this species.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take:

1) Measures shall be implemented by the Border Patrol to minimize injury of Sonoran pronghorn.

2) Measures shall be taken to monitor and study reactions of Sonoran pronghorn on BMGR to Border Patrol activities.

3) The Border Patrol as part of their action will provide a means to determine the level of incidental take that actually results from their activities.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of ESA, the Border Patrol must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

To implement Reasonable and Prudent Measure number 1:

1) Reduce flights into Cabeza Prieta and administrative road usage by Border Patrol vehicles during fawning.

2) Establish speed limits on all roadways in current pronghorn habitat, as identified by AGFD surveys, that are prudent for visibility so no Sonoran pronghorn are injured due to vehicles.

To implement Reasonable and Prudent measure number 2:

1) Within six months of the date of the opinion, the USBP will begin a study with AGFD to determine the effects of noise, visual impacts, and night operations from helicopter overflights on Sonoran pronghorn.

2) The USBP will within one year of the completion of the BO begin a study with AGFD to determine the effects of border patrol activities on pronghorn during fawning season.

3) All above studies and monitoring efforts will be coordinated with the Service.

To implement Reasonable and Prudent measure number 3:

1) A report of the results of all monitoring efforts, including complete and accurate records of all incidental take that occurred during the course of the actions described herein, will be submitted to the Service on a yearly basis. This report will also describe how each of the terms and conditions of all Reasonable and Prudent measures in this incidental take statement were implemented. The USBP will attach all maps, tables, a summary of meetings and contacts, and consultant's reports produced during the year to the annual report.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The Border Patrol must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

DISPOSITION OF DEAD, INJURED, OR SICK INDIVIDUALS

If a dead, injured, or sick individual of a listed species is found on the BMGR or CPNWR, initial notification must be made to Service Law Enforcement, Federal Building, Room 105, 26 North McDonald, Mesa, Arizona, 85201 (Telephone: (480)835-8289)and the Arizona Ecological Services Field Office (602-640-2720, -2730fax) immediately upon its finding. Written notification must be made within three calendar days and include the date, time, and location of the finding, a photograph of the animal, and any other pertinent information. The notification shall be sent to Law Enforcement with a copy to the Arizona Ecological Services Field Office(2321 W. Royal Palm Dr., Ste 103, Phoenix, Arizona 85021. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. If possible, the remains shall be placed with educational or research institutions holding appropriate State and Federal permits. If such institutions are not available, the information noted above shall be obtained and the carcass left in place. Arrangements regarding proper disposition of potential museum specimens shall be made with the Arizona Ecological Services office and the institution prior to implementation of the action. Injured animals should be transported to a qualified veterinarian by an authorized biologist. Should any treated animals survive, the Service must be contacted before the final disposition of any animals.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1) The Border Patrol should attend the biannual meetings of the Flat-tailed Horned Lizard Management Oversight Group.

2) The Border Patrol should assign the environmental protection specialist to coordinate the effects of their activities statewide on listed species in order to reduce these impacts where possible.

3) The USBP should continue participation in ecosystem partnerships with other federal agencies in Sonoran pronghorn habitat.

4) The Border Patrol should obliterate and block illegal roads in Sonoran pronghorn habitat created by illegal cross border traffic.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your continuing efforts to conserve listed species. If we can be of further assistance, please contact Mike Coffeen (x251) or Sherry Barrett (520-740-2764). Please refer to the consultation number 2-21-97-F-313 in future correspondence concerning this project.

Sincerely,

David L. Harlow
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque NM (GARD-AZ/NM)
Refuge Manager, Cabeza Prieta National Wildlife Refuge, Ajo, AZ
Director, BIA, Phoenix, AZ
Chairman, Tohono O'odham Nation, Sells, AZ

Director, Arizona Game and Fish Department, Phoenix AZ

draftbp_bo11:MPC

LITERATURE CITED

Abbate, D., A. Ditty, and S. Richardson. 1996. Cactus ferruginous pygmy-owl surveys and nest monitoring in the Tucson Basin area, Arizona. Final Report to the Arizona Game and Fish Department. 25 pp.

Abouhalder, F. 1992. Influence of livestock grazing on saguaro seedling establishment. Pages 57-61 *in* Stone, C.P., and E.S. Bellantoni, eds., Proceedings of the Symposium on Research in Saguaro National Monument, Tucson.

Arizona Game and Fish Department. 1981. The Sonoran Pronghorn. Special Report Number 10. Ariz. Game and Fish Dept. Phoenix, Ariz. 55 p.

_____. 1985 Interim Report on the Sonoran Pronghorn Antelope. (*Antilocapra americana sonoriensis*) Oct. 1983 - March 1985. Phoenix, Ariz. 57 pp.

Bright, J. L., J.J. Hervert, L.A. Piest, R.S.Henry, M.T. Brown. 1999. Sonoran pronghorn 1998 aerial survey summary. Technical Report 152. Arizona Game and Fish Dept. Phoenix, Ariz. 9p.

Brown, D.E. 1982. Biotic communities of the American southwest United States and Mexico. Desert Plants. 4 pp.

_____, ed. 1994. Biotic Communities- Southwestern United States and Northwestern Mexico. University of Utah Press, Salt Lake City. 342pp.

Byers, John A. 1997. American Pronghorn, Social Adaptions and the Ghosts of Predators Past. The University of Chicago Press, Chicago, 300 p.

Cabeza Prieta National Wildlife Refuge. 1980. Cabeza Prieta National Wildlife Refuge Management Plan. 1980. School of Renewable Nat. Res., Univ. of Ariz., Tucson.

Carr, J.N. 1970. Endangered species investigation. Sonoran Pronghorn. Arizona Game and Fish Department, Phoenix, Arizona.

_____. 1971. Progress report - Endangered species investigation. Sonoran pronghorn. pp. 247-262. Arizona Game and Fish Dept. Phoenix, Ariz.

_____. 1972. Endangered species investigation. Sonoran pronghorn. Ariz. Game and Fish Dept. Phoenix, Ariz. 8 pp.

_____. 1974. Complete report - Endangered species investigation. Sonoran pronghorn. pp. 1-5. Arizona Game and Fish Dept. Phoenix, Ariz.

Cherkovich, G.M., and S.K. Tatoyan. 1973. Heart rate (radiotelemetric registration) in macaques and baboons according to dominant-submissive rank in a group. Folia Primatol. 20:265-273.

Cockrum, E.L., and Y. Petryszyn. 1991. The lesser long-nosed bat. *Leptonycteris*: An endangered species in the Southwest? Texas Tech Univ., Occas. Pap. Mus., Number 142.

Collins, M.D.,and T.E. Corman. 1995. Cactus ferruginous pygmy-owl surveys in Arizona: 1993-1994 season. Arizona Game and Fish Department, Nongame & Endangered Wildlife Program Technical Report 37, Phoenix.

Dalton, V.M., D.C. Dalton, and S.L. Schmidt. 1994. Roosting and foraging use of a proposed military training site by the long-nosed bat, *Leptonycteris curasoae*. Report to the Luke Air Force Natural Resources Program, Contract Nos. DACA65-94-M-0831 and DACA65-94-M-0753. 34pp.

Dalton, V.M. and Dalton, D.C. 1993. Assessment of the impacts of low level military aircraft on Leptonycteris curasoae, an endangered bat, at Organ Pipe Cactus National Monument, Arizona. USAF contract # F0260492MS359. 54pp.

deVos, J.C. 1989. Evaluation of Sonoran Pronghorn Movements Around Military Activity Sites on Barry M. Goldwater Air Force Range. Arizona Game and Fish Department, Phoenix, Arizona, 18p.

_____. 1998. Habitat Selection Patterns by Sonoran Pronghorn in Southwest Arizona. In: First Conference on Research and Research Management in Southern Arizona: Extended Abstracts, ed. by T.J. Tibbitts and G.J. Maender, Organ Pipe Cactus National Monument and Cooperative Park Studies Unit, The University of Arizona, Tucson, Arizona.

Fleming, T.H., R.A. Nunez, and L.S.L. Sternberg. 1993. Seasonal changes in the diets of migrant and non-migrant nectarivorous bats as revealed by carbon stable isotope analysis. Oecologia 94:72-74.

Gentry, H.S. 1982. Agaves of Continental North America. Univ. of Arizona Press, Tucson.

Goldman, E.A. 1945. A new pronghorn from Sonora. Proceedings of the Biological Society, Washington 58:3-4.

Hall, E. Raymond. 1981. The Mammals of North America. John Wiley and Sons, New York, 1265 p.

Halloran, A.F. 1957. A note on Sonoran pronghorn. J. Mamm. 38(3):423.

Hervert, J.J., B. Henry, M. Brown, and L. Piest. 1996. Sonoran pronghorn population monitoring: progress report. Nongame and Endangered Wildlife Program Technical Report 110. Arizona Game and Fish Dept. Phoenix, Ariz.

Hervert, J.J., L.A. Piest, R.S. Henry, and M.T. Brown. 1997a. Sonoran pronghorn 1996 aerial survey summary. Nongame and Endangered Wildlife Program Technical Report 124. Arizona Game and Fish Dept., Phoenix, Ariz.

Hervert, J.J., L.A. Piest, W. Ballard, R.S. Henry, M.T. Brown, and S. Boe. 1997b. Sonoran pronghorn population monitoring: progress report. Nongame and endangered Wildlife Program Technical Report 126. Arizona Game and Fish Dept., Phoenix, Ariz.

Hoffmeister, D.F. 1986. Mammals of Arizona. University of Arizona Press, Tucson.

Horner, M..A.., T.H.. Fleming, and M.D. Tuttle. 1990. Foraging and movement patterns of a nectar feeding bat: *Leptonycteris curasoae*. Bat Research News 31:81.

Hoyt, R.A., J.S. Altenbach, and D.J. Hafner. 1994. Observations on long-nosed bats (*Leptonycteris*) in New Mexico. Southwestern Naturalist 39:175-179.

Hughes, K.S., and N.S. Smith. 1990. Sonoran pronghorn use of habitat in Southwest Arizona. Report to Cabeza Prieta National Wildlife Refuge, Ajo, Arizona.

INS. 1999. Biological Assessment U.S. Border Patrol, Yuma Sector, Wellton Station, Yuma, Arizona. Louis Berger and Assoc., Wash., D.C.

Johnson, B.K., F.G. Lindzey, and R.J. Guenzel. 1991. Use of aerial line transect surveys to estimate pronghorn populations in Wyoming. Wildl. Soc. Bull. 19:315-321.

Martell, M. 1992. Bald eagle winter management guidelines. Rep. to US Fish and Wildlife Service, Raptor Center, St. Paul, Minnesota.

Martin, P.S., et al., eds. 1998. Gentry's Rio Mayo plants, the tropical deciduous forest and environs of northwest Mexico. The Southwest Center Series, University of Arizona Press, Tucson. 558pp.

Minnich, R.A. 1994. Postfire succession in desertscrub communities of southern California. Pages 93-112 *in* Fletcher-Jones, A., ed., Proc. of the Desert Tortoise Council Symposium.

Moen, A.N., M.A. DellaFera, A.L. Hiller, and B.A. Buxton. 1978. Heart rates of white-tailed deer fawns in response to recorded wolf howls. Can. J. Zool. 56:1207-1210.

Monson, G. 1968. The desert pronghorn. Pages 63-69 In: Desert Bighorn Council Transactions, Las Vegas, Nevada.

Nelson, F.W. 1925. Status of the pronghorn antelope, 1922-1924. U. S. Dept. Agric. Bull. 1346.

Nichol, A.A. 1941. Game Reconnaissance of Southwest Arizona, South of the Gila River. Unpublished. Arizona Game and Fish Dept. Phoenix, Ariz.

Nowak, R.M., and J.L. Paradiso. 1983. Walker's Mammals of the World. 4th. Ed. Vol. II. John Hopkins Univ. Press. Baltimore, Maryland. pp. 1230-1232.

Paradiso, J.L. and R.W. Nowak. 1971. Taxonomic status of the Sonoran Pronghorn. J. Mamm. 52(4):855-858.

Platt, J.B. 1976. Bald eagles wintering in a Utah desert. American Birds 30:783-788.

Proudfoot, G. 1996. Natural history of the cactus ferruginous pygmy-owl. MS Thesis, Texas A & M University, Kingsville, Texas.

Sahley, C.T., M.A. Horner, and T.H. Fleming. 1993. Flight speeds and mechanical power outputs in the nectar feeding bat, *Leptonycteris curasoae* (Phyllostomidae: Glossophaginae). J. Mamm. 74:594-600.

Sellers, W.D., and R.H. Hill. 1974. Arizona Climate 1931-1972. Second ed. Univ. of Ariz. Press. Tucson, Ariz.

Sidner, R. 1999. Ninth annual monitoring report of bats, especially the lesser long-nosed bat (*Leptonycteris curasoae*), with emphasis upon roost sites on the Fort Huachuca Military Reservation, Cochise County, Arizona, May - October 1998. Report to Fort Huachuca, AZ. Contract #DABT63-98-T-0093.

Slauson, L. 1996. Pollination ecology of *Agave chrysantha* and *Agave palmeri.* Pages 154-203 *in* Amorphametric and Pollination Ecology Study of *Agave chrysantha* Peebles and *Agave palmeri* Englem. (Agavaceae). Ph.D. Diss., Arizona State University, Tempe.

_____. 1999. Pollination biology of two chiropterophilous agaves in Arizona, Draft. Desert Botanical Garden, Phoenix.

Snow, T.K. 1994. Sonoran pronghorn aerial survey summary 1992-1994. Nongame and Endangered Wildlife Program Technical Report 51. Arizona Game and Fish Department, Phoenix, Arizona.

Thompson, R.D., C.V. Grant, E.W. Pearson, and G.W. Corner. 1968. Cardiac response of starlings to sound: effects of lighting and grouping. Am. J. Physiol. 214:41-44.

U.S. Fish and Wildlife Service. 1982. Sonoran Pronghorn Recovery Plan. U.S. Fish and Wildlife Service. Denver, Colorado. 26 pp.

_____. 1988a. Endangered and threatened wildlife and plants; determination of endangered status for two long-nosed bats. Federal Register 53(190):38456-3860.

_____. 1994. Endangered Species Act of 1973 as Amended thru the 100th Congress. U.S.D.I., Wash., D.C. 45pp.

_____. 1996. Letter to Charles R. Bazan, Forest Supervisor, from Sam Spiller, Field Supervisor, October 2, 1996; Amendment to Dos S biological opinion. Arizona Ecological Service Field Office, Phoenix. 5pp.

_____. 1997. Lesser long-nosed bat recovery plan. Albuquerque, New Mexico. 49pp.

_____. 1998. Final Revised Sonoran Pronghorn Recovery Plan (*Antilocapra americana sonoriensis*). U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico.

_____. 1999. Proposed threatened status for the Mountain Plover. Federal Register, Vol.64 (30), February 16, 1999, pp.7587-7601.

_____. 1999a. Endangered and threatened wildlife and plants; designation of critical habitat for the cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*). Federal Register 64(132):37419-37440.

_____. 2000. Cactus Ferruginous Pygmy-owl Survey Protocol, revised January 2000. USFWS, Phoenix, Ariz. 10pp.

Villa, R.B. 1958. Partial account of Prof. Bernardo Villa R. Concerning the study of bighorn sheep and antelope in northern Mexico. Inst. Biol., Mexico, D.F. Unpublished.

Workman, G.W., T.D. Bunch, J.W. Call, R.C. Evans, L.D.S. Neilson, E.M. Rawlings. 1992. Sonic boom and other disturbance impacts on pronghorn antelope (*Antilocapra americana*). Air Force Contract: F42650-87-C-0349, Utah State Univ. Logan, Ut. 67 pp.

Wright, R.L., and J.C. deVos Jr. 1986. Final Report on Sonoran Pronghorn Status in Arizona. Ariz. Game and Fish Dept. Phoenix, Ariz. 132 pp.

This page intentionally left blank.

Figure 1. Border Patrol Tire Drag

Figure 2. Border Patrol Drag Road, BMGR.

APPENDIX A. CONCURRENCES-

-This section contains all concurrences with "may affect, not likely to adversely affect determinations" made by the Border Patrol.

MOUNTAIN PLOVER (*Charadrius montanus*)

Status of the Proposed Species in the Project Area-

The mountain plover is a bird of shortgrass prairie and shrub-steppe landscapes at both breeding and wintering locales. Breeding occurs in the Rocky Mountain States from Canada south to Mexico with most breeding birds occurring in Montana and Colorado. Breeding mountain plovers are rare in Arizona, however, an adult incubating three eggs was found near Springerville, Apache County, Arizona in May 1996. Most wintering birds occur on grasslands or similar landscapes in California; fewer wintering birds occur in Arizona, Texas, and Mexico.

Mountain plover surveys are recommended for areas containing breeding habitat (Diebert et al. 1999). Such habitat is typically known to include short-grass prairie and shrub-steppe landscapes; dryland, cultivated farms; and prairie dog towns. Plovers usually nest on sites where vegetation is sparse or absent, due to disturbance by herbivores, including domestic livestock and prairie dogs. Vegetation at shortgrass prairie sites is less than 4 inches tall, while shrubs visually predominate nest sites within the shrub-steppe landscape. Usually, nest sites within the shrub-steppe are on active prairie dog towns. Nests are commonly located near a manure pile or rock. Mountain plovers are rarely found near water. Positive indicators for mountain plovers include level terrain, prairie dogs, bare ground, *Opuntia* pads, cattle, widely spaced plants, and horned larks. It would be unusual to find mountain plovers on sites characterized by irregular or rolling terrain; dense, matted vegetation; grass taller than 4 inches, wet soils, or the presence of killdeer.

In Arizona, mountain plovers occur in dormant alfalfa fields and field edges along the Colorado River during the winter. Within the Yuma Border Patrol Project area, vegetative communities consist primarily of Sonoran desert scrub (INS 1999). Since mountain plovers are normally associated with short-grass prairies, their occurrence in the project area is unlikely, and would only be a transitory event for wintering. Furthermore, the nearest known wintering area is located approximately 15 miles away in alfalfa fields southwest of the Wellton Station but only seven miles from the west end of the coverage area of the Yuma Sector/Wellton Station in this consultation.

Conclusion-

Based on the information presented in the BA, the Service concurs with the Border Patrol's determination that activities associated with this project may affect, but are not likely to adversely affect mountain plovers. This concurrence is based on the following:

1) Mountain plover only potentially are found in the western portion of the project area which is wintering habitat. Wintering birds in Yuma constitute only a small portion of the overall population.

2) Winter use areas are dormant alfalfa fields and field edges along the Colorado River corridor. Border Patrol vehicles do not usually enter cultivated fields to apprehend illegals so there is little likelihood of harassment or harm to plovers.

3) Mountain plover are expected to continue in their use of agricultural areas around Yuma, Arizona in the winter where Border Patrol activities occur, and no additional habitat is expected to be lost or degraded because of proposed activities.

CACTUS FERRUGINOUS PYGMY-OWL (*Glaucidium brasilianum cactorum*)

Status of the Species

The Service listed the Arizona population of the cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*) (CFPO) on March 10, 1997; the listing was effective on April 9, 1997. CFPOs are a small bird, averaging 17 cm (6.75 in) in length.

Suitable habitat for the pygmy-owl is defined as areas below 4000 ft (1,220 m) in elevation containing one or more of the following vegetative communities (USFWS 2000):

- Riparian vegetation: Broadleaf, riparian gallery forests of cottonwoods, willows, mesquites, ash, or other trees growing along watercourses and associated species.

- Sonoran desert scrub: Characterized by braided wash systems and vegetation which is dense and well structured. Key species include mesquite, foothill and blue palo verdes, ironwood, saguaro, organ pipe cactus, and various other shrubs and cacti.

- Semidesert grasslands: Containing wooded drainages with mesquite, hackberry, ash, and limited number of saguaros.

Vegetative communities listed above containing saguaro cactus or other columnar cactus that are 8 ft. or taller, or ironwood, mesquites, palo verde, or other large trees with a trunk diameter of 6 in (15 cm) or greater measured at 4.5 ft (1.37 m) above the ground may provide nesting opportunities for pygmy-owls. Urban areas and areas currently devoid of saguaros, other columnar cactus, or large trees are excluded from survey requirements.

Life History

While the majority of CFPO detections the last six years are from the northwest Tucson area, CFPOs have also been detected in southern Pinal County, at OPCNM, on the Buenos Aires National Wildlife Refuge (BANWR), and on the Coronado National Forest. CFPOs at OPCNM have been detected in Sonoran desert scrub habitat dominated by saguaro, creosotebush (*Larrea tridentata*), velvet mesquite (*P. velutina*), palo verde, cat-claw acacia, white brittlebush (*Encelia farinosa*), triangle-leaf bursage, and ironwood. Small washes in the area support salt cedar (*Tamarix pentandra*) and canyon ragweed (*A. ambrosioides*). In addition, relatively large mesquite bosques are present in some areas (Collins and Corman 1995). On the BANWR and

adjacent areas in the Altar Valley, CFPOs have been located within riparian habitat in semidesert grassland communities. Vegetation in these riparian areas included netleaf hackberry, velvet mesquite, Arizona ash (*Fraxinus velutina* var. *velutina*), acacia, and Mexican elderberry (*Sambucus caerulea*).

Critical Habitat

The Service published a final rule (USFWS 1999a) on July 12, 1999 which designated approximately 296,115 ha (731,712 ac) of riverine riparian and upland habitat in Pima, Cochise, Pinal, and Maricopa counties in Arizona.

Effects of the Action

The historic range of the CFPO minimally overlaps the area covered by the Border Patrol actions in the southeast corner of Yuma County, Arizona. No CFPOs have been identified in or near the project area since the single individual was identified at Cabeza Prieta Tanks in 1955 (Monson 1998). There is some potential suitable habitat for the CFPO within the Wellton Station action area, (USFWS 1996) but it is of low suitability (Duncan 1998). The Border Patrol helicopter flight path and vehicle roads pass over or intersect numerous sonoran desert scrub washes, most of which are too sparse to support CFPOs.

However, the potential for adverse effects to this species is very small in Yuma County. Most of the habitat in the project area is Lower Colorado River Valley Subdivision of the Sonoran desert scrub biome (Brown 1955). Current pygmy-owl locations have been documented within Sonoran desert scrub, riparian vegetation, and semidesert grassland vegetative communities (USFWS 2000). There were 78 detected CFPO, including juveniles, in surveys from 1999 (Cartron and Finch 2000), and most (39) were found in the NW Tucson/southern Pinal County area. The only record of a CFPO from Yuma County is one observed at the Cabeza Prieta Tanks on April 10, 1955, and is thought to be an incidental wanderer. Surveys for CFPOs conducted on the Goldwater Range in 1993, 1994, 1997, and in the Cabeza Prieta NWR in 1994 and 1998 found no sighting of this species; and the habitat quality was poor (USFWS 1996, Aigner and Koehler 1997, Duncan et.al.1998).

The owls nest in riparian trees and columnar cacti. The Border Patrol activities, including work on remote sensors, do not involve the removal or disturbance of these habitat features. All drag roads are pre-existing roads, and there are no plans to create additional roads. CFPOs are a diurnal species and would be active during the same time periods as the Border Patrol but the chance of an encounter is remote because of the scarcity of sightings in the project area. The possibility of a mid-air collision between a CFPO and a Border Patrol helicopter is equally remote.

Border Patrol activities may actually benefit CFPOs through the reduction of human activities in the area such as from illegal entry of undocumented aliens and drug traffickers that would adversely affect owls and their habitat.

Conclusion

After reviewing the current status of the CFPO, the environmental baseline for the action area, and the anticipated effects of the proposed action, the Service concurs with the Border Patrol determination that their activities in the project area may affect, but are unlikely to adversely affect, the cactus ferruginous pygmy-owl. There are no reports of any CFPOs in the project area and the habitat is of poor quality. Critical habitat has been designated for this species but none is located within the project area, and none will be adversely modified.

AMERICAN PEREGRINE FALCON (*Falco peregrinus anatum*)

The American peregrine falcon was removed from the Federal list of Endangered and Threatened Wildlife on August 25, 1999 (64 FR:46542). Federal agencies are no longer required to consult with the Service under section 7 of the Endangered Species Act (Act) in the event activities they authorize, fund or carry out affect peregrine falcons. However, removal of the protection of the Act will not affect the protection afforded all peregrine falcons under the Migratory Bird Treaty Act. In addition, the Act requires monitoring of the species for at least five years after delisting. This monitoring will consist, at a minimum, of annual occupancy surveys, assessing productivity, determining contaminant concentrations, and monitoring levels of take of peregrine falcons for falconry purposes (63 FR: 45446). The Service is currently developing a monitoring plan which will be available in the near future.

References:

U.S. Department of the Interior, Fish and Wildlife Service. 1998. Endangered and threatened wildlife and plants; proposed rule to remove the peregrine falcon in North America from the list of endangered and threatened wildlife. Federal Register 63:45446-45463.

U.S. Department of the Interior, Fish and Wildlife Service. 1999. Endangered and threatened wildlife and plants; final rule to remove the American peregrine falcon from the Federal list of endangered and threatened wildlife, and to remove the similarity of appearance provision for free-flying peregrines in the conterminous United States. Federal Register 64:46542-46558.

BALD EAGLE (*Haliaeetus leucocephalus*)

Status of the Species in the Project Area

In Arizona, bald eagles nest primarily on the Salt and Verde Rivers in the central part of the state where there are large cliffs and trees to provide nest sites near waters with fish. In western Arizona, they nest near Bill Williams River near Alamo Lake. Most of the state's major river systems, including the mainstem of the Colorado River, support wintering bald eagles. Important food prey items in the southwest include fish, waterfowl, rabbits, and carrion. Food availability and perch sites may limit wintering bald eagle abundance in Arizona. Other factors limiting their abundance include human disturbance and loss of aquatic habitat.

Effects of the Action

No nesting bald eagles occur on the BMGR. The entire state is considered within the range of the wintering bald eagles, but there is no suitable habitat present on the BMGR. Bald eagles would be an uncommon transient if they occurred in the area covered by the Yuma Sector/Wellton Station.

The main concern for wintering eagles in Arizona is the maintenance of roost trees. The best sites and trees may be the only ones used, and tend to have large trees surrounding the roost trees that may serve as some sort of buffer (Platt 1976, Martell 1992). The Border Patrol action as proposed should not reduce roost trees in upland areas.

Conclusion

The Service concurs with the Border Patrol's determination that the proposed action may affect, but is not likely to adversely affect the bald eagle. This concurrence is based on the following:

1. There are no known nesting or roost sites in the project area, therefore no disturbance of such sites is expected.

2. The only bald eagles using the action area would be uncommon winter transients and thus would unlikely be affected by the Border Patrol activities.

LESSER LONG-NOSED BAT (*Leptonycteris curasoae yerbabuenae*)

Status of the Species in the Project Area

The lesser long-nosed bat is a medium size, leaf-nosed bat. It has a long muzzle, a long tongue, and is capable of hover flight. These features are adaptations that allow the bat to feed on nectar from the flowers of columnar cacti such as the saguaro (*Carnegiea giganteus*) and organ pipe cactus (*Stenocereus thurberi*), and from paniculate agaves such as Palmer's agave (*Agave palmeri*) and Parry's agave (*A. parryi*)(Brown 1994)(Martin et al. 1998). Palmer's agave exhibits many characteristics indicating they are pollinated by bats, such as nocturnal pollen dehiscence and nectar production, light colored and erect flowers, strong floral order, and high levels of pollen protein with relatively low levels of nectar sugar concentrations (Slauson 1996). Parry's agave demonstrates many (although not all) of these same morphological features (Gentry 1982). Slauson (1999) demonstrated that there was a mutualistic relationship between Palmer's agave and the lesser long-nosed bat, though this relationship was asymmetric. The bat is quite dependent on the agave for food during a certain period, but the agave has other pollinator options.

The lesser long-nosed bat is migratory and found throughout its historic range, from southern Arizona and extreme southwestern New Mexico, through western Mexico, and south to El Salvador. In southern Arizona lesser long-nosed bat roosts have been found from the Picacho Mountains (Pinal County) southwest to the Agua Dulce Mountains (Pima County), southeast to the Chiricahua Mountains (Cochise County) and south to the international boundary. Individuals

have also been observed from the vicinity of the Pinaleno Mountains (Graham County) and as far north as Phoenix and Glendale (Maricopa County)(AGFD Heritage Data Management System). This bat is also known from far southwestern New Mexico in the Animas and Peloncillo Mountains (Hidalgo County). It is a seasonal resident in Arizona, arriving in early April and leaving in mid-September to late October (Cockrum and Petryszyn 1991, Sidner 1999); the bat has only rarely been recorded outside of this time period in Arizona (USFWS 1997, Hoffmeister 1986). It resides in New Mexico only from mid-July to early September (Hoyt et al. 1994).

Roosts in Arizona are occupied from April to October (Cockrum and Petryszyn 1991, Sidner 1999). In spring, adult females, most of which are pregnant, arrive in Arizona and gather into maternity colonies in southwestern Arizona. These roosts are typically at low elevations near concentrations of flowering columnar cacti. Litter size is one. After the young are weaned these colonies disperse in July and August; some females and young move to higher elevations, ranging up to more than 1,818 m (6,000 ft), primarily in the southeastern parts of Arizona near concentrations of blooming paniculate agaves. Actual dates of these seasonal movements by lesser long-nosed bats are rather variable from one year to the next (Cockrum and Petryszyn 1991, Fleming et al. 1993). Adult males typically occupy separate roosts forming bachelor colonies. Males are known mostly from the Chiricahua Mountains, but also occur with adult females and young of the year at maternity sites (USFWS 1997b). Throughout the night between foraging bouts both sexes will rest in temporary night roosts (Hoffmeister 1986).

Lesser long-nosed bats appear to be opportunistic foragers and efficient fliers, capable of flight speeds up to 23 kilometers per hour (14 mph) (Sahley et al. 1993), and often foraging in flocks. Seasonally available food resources may account for the seasonal movement patterns of the bat. The lesser long-nosed bat is known to fly long distances from roost sites to foraging sites. Night flights from maternity colonies to flowering columnar cacti have been documented in Arizona at 24 km (15 mi), and in Mexico at 40 km (25 mi) and 61 km (38 mi)(one way)(Dalton et al. 1994; V. Dalton, Tucson, pers. comm., 1997; Y. Petryszyn, University of Arizona, pers. comm., 1997). A substantial portion of the lesser long-nosed bats at the Pinacate Cave in Sonora (a maternity colony) fly 40 to 50 km (25-31 mi) each night to foraging areas in Organ Pipe Cactus National Monument (USFWS 1997b). Horner et al. (1990) found that lesser long-nosed bats commuted 48 to 58 km (30-36 mi) round trip between an island maternity roost and the mainland in Sonora; the authors suggested these bats regularly flew at least 80 to 100 km (50-62.5 mi) each night. Lesser long-nosed bats have been observed feeding at hummingbird feeders many miles from the closest potential roost site (Petryszyn, pers. comm., 1997).

The lesser long-nosed bat was listed (originally, as *Leptonycteris sanborni*; Sanborn's long-nosed bat) as endangered in 1988 (USFWS 1988a). No critical habitat has been designated for this species. The recovery plan was completed in 1997 (USFWS 1997b). Loss of roost and foraging habitat, as well as direct taking of individual bats during animal control programs, particularly in Mexico, have contributed to the current endangered status of the species. There has been a significant degree of debate and controversy regarding the actual population size and appropriate listing status of the species. The recovery plan states that the species will be considered for delisting when three major maternity roosts and two post-maternity roosts in the United States, and three maternity roosts in Mexico have remained stable or increased in size for at least five years, following the approval of the recovery plan.

Suitable day roosts and suitable concentrations of food plants are the two resources that are crucial for the lesser long-nosed bat (USFWS 1997b). Caves and mines are used as day roosts. The factors that make roost sites useable have not yet been identified. Whatever the factors are that determine selection of roost locations, the species seems sensitive to human disturbance. Instances are known where a single brief visit to an occupied roost is sufficient to cause a high proportion of lesser long-nosed bats to temporarily abandon their day roost and move to another. Perhaps most disturbed bats return to their preferred roost in a few days. However, this sensitivity also suggests that the presence of alternate roost sites may be critical when disturbance occurs. Interspecific interactions with other bat species may also influence lesser long-nosed bat roost requirements.
There are no known locations of the LLNB on the BMGR. The closest roosts are found on Cabeza Prieta NWR in the Agua Dulce Mountains. These records are for two small roosts and one larger one (Hoffmeister 1986). The nearest potential foraging habitat is also in Cabeza Prieta NWR in the Sierra Pinta Mountains which are east of the current project area.

Conclusion

The Service concurs with the Border Patrol's determination that the proposed action may affect, but is not likely to adversely affect the lesser long-nosed bat. This concurrence is based on the following:

1. The three roosts for LLNB in the Agua Dulce Mountains considered in this review are beyond the normal helicopter and motor vehicle patrol area except for the occasional trip to Why to refuel, and given the fact that Border Patrol agents do not enter caves as part of their duties, disturbances to these foraging or roosting bats would be very unlikely.

2. Border patrol activities may benefit lesser long-nosed bats by reducing other human activities in the area such as undocumented aliens hiking or driving through the area and possibly using caves as shelters.

3. Border Patrol activities are not likely to destroy agaves used as food sources by LLNBs.